

REMARKS

Claims 1-10 and 12 are pending in this application. By this Amendment, claim 1 is amended. Claim 11 is canceled without prejudice to, or disclaimer of, the subject matter recited in that claim. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The Office Action, in paragraph 4, rejects claims 1, 2 and 4-13 under 35 U.S.C. §102(b) as being anticipated by EP 1 150 343 A2 to Rutter et al. (hereinafter "EP '343"). The Office Action, in paragraph 5, rejects claims 1-13 under 35 U.S.C. §102(e) as being anticipated by EP 1 315 045 A1 to Takei et al. (hereinafter "EP '045"). The Office Action, in paragraph 6, rejects claims 1, 2 and 4-13 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,919,599 to Meador et al. (hereinafter "Meador"). These rejections are respectfully traversed.

The Office Action, in paragraphs 4-6, asserts that each of EP '343, EP '045 and Meador teach compositions with features that are alleged to correspond to the combination of all of the features recited in independent claim 1. These assertions are incorrect for at least the following reasons.

None of the EP '343, EP '045 or Meador, individually or in combination, teach, nor can they reasonably be considered to have suggested, features of the composition comprising a polymer having a hydroxy group or a carboxy group; a crosslinking agent; and an alkali-dissolution rate regulator selected from the group consisting of naphthoquinone compounds, compounds having a t-butoxycarbonyl group, compounds having a hydroxy group, compounds having a carboxy group, and compounds having a phenyl group, wherein a gap fill material layer manufactured by coating and baking the gap fill material forming composition on a semiconductor substrate has a dissolution rate ranging from 3 to 200 nm per

second for an alkaline aqueous solution having a concentration of 0.1% to 20%, as positively recited in claim 1.

For example, none of the applied references discloses an alkali-dissolution rate regulator selected from the group consisting of naphthoquinone compounds, compounds having a t-butoxycarbonyl group, compounds having a hydroxy group, compounds having a carboxy group, and compounds having a phenyl group. The gap fill material that is the subject matter of the pending claims performs wet etching with an alkaline aqueous solution that does not require any transfer to any other apparatus after coating the gap filling material. In other words, using the claimed composition, the wet etching is performed in the apparatus used for coating the gap filling material. The applied references neither disclose any lithographic process effective for wet etching, nor the specific combination of components, recited in claim 1. Additionally, the disclosures of the applied references are limited by the etch-back step performed by dry etching with gas that requires a transfer to another apparatus for dry etching after coating the gap filling material, which leads to a more tedious and less effective production process.

The gap filling material that is the subject matter of the pending claims also exhibits the unexpected result of a sufficient flattening property to coat the unevenness of the surface of the gap filling material resulting at least from the feature of a dissolution rate ranging from 3 to 200 nm per second for an alkaline aqueous solution having a concentration of 0.1% to 20%, as recited in claim 1. The Office Action, in the Response to Arguments, concedes that none of the applied references discloses the dissolution rate recited in claim 1. To cure this deficiency, the Office Action asserts that this feature is inherent allegedly because if a composition is substantially identical to the one claimed, a film made from the substantially identical composition would possess the identical properties, such as the specified dissolution rate.

For at least the reasons discussed above, the compositions disclosed by the applied references are not identical, nor substantially identical, to the claimed composition.

Further, to establish inherency, the missing descriptive matter must necessarily be present in the thing described in the reference. Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). As explained in MPEP §706.02, "a reference used under 35 U.S.C. §102 must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." MPEP §2112 states that the Patent Office must provide rationale or evidence tending to show inherency. Citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ 2d 1949, 950-51 (Fed. Cir. 1990), MPEP §2112 states "(i) inherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Additionally, citing *Ex parte Levy*, 17 USPQ 2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), §2112 states "(i)n relying upon the theory inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" (emphasis in original). The above-quoted standards are not met in this Office Action, and conclusory statements in this regard do not suffice.

For at least the reasons indicated above, none of EP '343, EP '045 or Meador explicitly or impliedly teach the combination of all of the features positively recited in independent claim 1. Claims 2-10 and 12 are also neither taught, nor would they have been suggested, by any of EP '343, EP '045 or Meador for at least the respective dependence of these claims, directly or indirectly, on an allowable independent claim 1, as well as for the separately patentable subject matter that each of the claims recites.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-10 and 12 under 35 U.S.C. §§102(b) or (e) as being anticipated by any of EP '343, EP '045 and/or Meador are respectfully requested.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 and 12 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,



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